RECEIVED

JAN - 8 1997

Federal Communications Commission
Office of Secretary

DOCKET FILE COPY ORIGINAL

January 8, 1997

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W. Room 222
Washington, D.C. 20036

RE: Federal-State Joint Board on Universal Service - Proxy Model Workshops, CC Docket No. 96-45, Response to Public Notice of December 12, 1996 (DA 96-2091)

Dear Mr. Caton,

Information on proxy cost models in accordance with the above referenced Public Notice was due on January 7, 1997. The sponsors of the Benchmark Cost Proxy Model – Pacific Bell, Sprint, and U S WEST – respectfully provide this notification of their submission on January 8, 1997. Employees of the sponsoring companies have worked cooperatively since late Summer to combine the best aspects of the Cost Proxy Model and the Benchmark Cost Model 2. The result is an enhanced proxy cost model designated as the Benchmark Cost Proxy Model (BCPM). However, due to computer communications transfer problems between Sprint's Westwood, Kansas headquarters and its Washington, D. C. office, the attached comments could not be relayed and edited by the January 7, 1997, due date.

It is believed that no party will be adversely affected by the filing of the requested information today rather than yesterday. Information relating to the BCPM will be provided in greater detail during the Commission's proxy cost model workshops on January 14 and 15, 1997.

Respectfully submitted,

Alan Ciamporcero/WDH
Pacific Bell

Warren Hannah
Sprint

Glenn Brown/WDH
U S WEST

No. of Copies rec'd 0+4
List A B C D E

January 7, 1997

Office of the Secretary
Federal Communications Commission
Room 222
1919 M Street, NW
Washington, DC 20554

Re: *Federal-State Joint Board on Universal Service -- Proxy Model Workshops on January 14-15, 1997*, CC Docket No. 96-45, *Response to Public Notice of December 12, 1996* (DA 96-2091)

Dear Mr. Caton:

On behalf of the Pacific Bell, U S WEST and Sprint, we hereby respond to the *Public Notice*, released December 12, 1996, which seeks input on the Proxy Model issues facing the Commission in its *Universal Service* docket. We provide a general description of the Benchmark Cost Proxy Model (BCPM) that Pacific, U S WEST and Sprint will sponsor at the January 14-15, 1997 proxy model workshops; provide specific answers to the numerous technical questions raised in the attachment to the notice and explain how the BCPM model conforms to the Joint Board recommendation.

As of the required filing date, the BCPM sponsors are experiencing difficulty in the output modules of the new model. For this reason, and rather than place data which we know to be incorrect on the record, Attachments 1, 2, 7and 8 in the following answers are not included with this transmission. We are providing Attachments 3, 4, 5, 6, 9 and 10 which answer most of the Commission's questions and provide complete model documentation and input data. We will endeavor to provide the missing data as soon as is possible.

I. INTRODUCTION AND SUMMARY

During the Joint Board proceeding in CC Docket 96-45, Sprint and U S WEST sponsored the Benchmark Cost Model 2, and Pacific Bell sponsored the Cost Proxy Model. Both of these models were excellent models which developed the overall cost of providing basic universal service. Although the two models approached the development of network costs from a totally different perspective, the bottom line results of the models were surprisingly similar. As a result of this similarity, and in an effort to develop a consensus around a final proxy model, the three companies have combined their talents and energy to develop a model which incorporates the best aspects of both models. We call this model the Benchmark Cost Proxy Model (BCPM). (Over time this new model has also been referred to as the "Best of Both" or "Best of Breed," or more simply as "BOB").

Highlights of the BCPM include:

- A new forward-looking capital cost model which allows the user to easily modify all factors relating to cost of capital and economic depreciation.
- Forward-looking investment and expense factors based upon data from a broad industry base reflecting the current cost of procuring, installing and operating state-of-the-art telecommunications equipment.

- Factors that are easily user adjustable.
- Clear and concise documentation of all model equations and algorithms as well as complete documentation of the source of all default input variables.
- Greatly enhanced speed and ease of operation, including the ability to change program inputs either through easy to use drop-down menus or direct access to EXCEL spreadsheets.
- Methods to process multiple investment and expense views across multiple states, providing the user with a great deal of flexibility in performing multiple scenario analysis.
- Computation of forward-looking cost for unbundled network elements (Available February 15, 1997).

The BCM2 used as its fundamental unit of study the census block group (CBG), while the CPM used the much smaller "grid cell" which is based on census blocks. Incorporation of the Census Block (CB) data into the dynamic design process of the BCPM is scheduled for a future phase release. The data submitted with this filing are thus computed at the CBG level.

In light of the requirement that the FCC reach a decision on Universal Service issues by May 8, 1997, the sponsors of the BCPM grant to the FCC and the Joint Board the right to make any changes in the model that they believe are in the public interest and are necessary to carry out their responsibilities under the Telecommunications Act of 1996.

II. ANSWERS TO BUREAU'S QUESTIONS

We hereby respond to the Bureau's questions contained in the attachment to the *Public Notice.*

Model revisions

1) With regard to the model that you have submitted, list and explain the differences between the current model and the version of the model previously filed in CC Docket 96-45. Explain any plans for additional enhancements to the model. Provide a date certain for when the planned enhancements will be provided to the Commission.

Answer 1:
The BCPM is a combination and improvement of the best attributes of both the BCM2 and the CPM. The BCM2 is well recognized for its dynamic building of the network. The CPM is heralded for its fine unit of geography (the "Grid"), its assignment of households to serving wire centers, and its flexible and dynamic reporting interface. The BCPM takes these attributes and adds some new ones, such as expanded engineering inputs and a forward-looking capital cost module. What follows is a list of the attributes included (or to be included) in this new model. We are introducing Phase 1 at this time, Phase 2 will be introduced after the workshops by February 15, 1997, and will be influenced by the decisions made at the workshops.

Item	Phase 1	Phase 2	Future
Using households as a surrogate for lines, an adjustment to households was made in both the CPM and BCM2 to match line counts. In the BCPM, residence and business customer line counts are introduced and will match at the level of:	State	Company	CLLI
Based on the unit of geography used to collect the data (CBG's, CB's, or Grids), customers are associated with a wire center. In the BCM2 and Hatfield, this association was made based on the closest wire center. In the BCPM, the association will be made to the serving wire center for the centroid of the unit of geography:	CBG	CB	Grid
Currently, the BCM2 and Hatfield use the CBG as the unit of data. The CPM is based upon the CB that is partitioned into grids. Phase 1 of BCPM is based on CBG data. Phase 2 will be based upon CB data. To illustrate this development, we have included Connecticut data at the CB level with our Phase 1 results. In the future, BCPM could be run at the Grid level.	CBG	CBG/CB	CB/Grid
The CPM offers a wide variety of reporting levels (County, CLLI, Density Zone, Terrain Type, Census Block Group.) This type of reporting capability has been added and improved in the BCPM	Complete		
In addition, the CPM offered detail reports listing all the facilities used in an area. This capability is incorporated into the new BCPM	Complete		
All of the models currently use some type of employee count to estimate the number of business lines. The investigation of a better data source is still under way. In the meantime, the adjustment of the business data to match single line counts will be improved in phase 1 to match at the state level.	State	Company	CLLI
Density classifications are used to adjust the cost factors for outside plant placement. The CPM's density classifications (e.g., <10hh/mi², 11-50, 51-150, 151-500,501-2000, 2001-5000, >5000) will be used in the BCPM. This is done since they are more evenly distributed (on a log scale) and more closely match engineering break points.	Complete		
The BCPM will expand the development of the structure (i.e., poles, conduit, trench) investment within the model. In the BCM2 and CPM, many of these calculations were performed outside of the model. Now, the BCPM has included these calculations as user controlled inputs.	Complete		
This is done through expanded input tables and the recognition of pole and conduit facilities as separately placed plant (not a factor of cable).	Complete		

Item	Phase 1	Phase 2	Future
The CPM recognized that there were major differences in the cost of placing and maintaining underground and buried, and therefore separated the two. The BCPM also recognizes this fact. In addition, the BCPM has been modified to allow the user to input plant mixes by density zone. This recognizes that plant placement is dependent on the area's specific parameters.	Complete		
The cost of installing plant is a function of both the cable size being used and the method of placement. The BCPM data inputs separately compute cable material and installation costs	Complete		
The BCPM includes a powerful yet simple model that allows the user to vary the basic inputs to arrive at the forward-looking depreciation, cost of capital, and tax rates. This new module incorporates all of the methodologies that are currently in practice today, including: deferred taxes, mid-year, beginning year, and end year placing conventions, Gompertz-Makeham Survival curves, future net salvage, equal life group methods, and many other items. The module also incorporates separate cost of debt and equity rates, along with the debt to equity ratio.	Complete		
The BCPM expands the number of accounts with annual charge factors. For example, conduit has been broken out from the cable accounts. There is a separate annual charge factor for each of the USOAR Main Accounts. It is important to note that the annual charge factor does not include operating expenses. The BCPM separately estimates the operating expenses on a per line basis.	Complete		
The BCPM input tables and model logic have been improved to accommodate separate cost inputs for small, medium, and large LECs. However, the data to populate these tables is currently not available.	Complete	Data by company size	
What impaired all of the models was that the inputs did not necessarily represent what the average LEC actually incurred to buy and place state-of-the-art plant. The BCPM team undertook an extensive data sampling of the LECs forward looking costs of installing and maintaining plant and providing and maintaining service to basic residential and business customers. The results of these studies have been incorporated into the BCPM input tables.	Complete		
Using the dynamic modeling of the BCM2, changes were made to incorporate structure improvements, underground/buried separation, data table improvements, and feeder/distribution recognition	Complete		

Item	Phase 1	Phase 2	Future
The BCPM is user-friendly allowing easy access to all data items and an easy to use report generation interface	Complete		
BCM2 and BCPM did not provide for the sharing of structure costs. BCPM allows for the sharing of various structures (i.e., trench, conduit, poles). Sharing percentages may differ by density zone and all sharing percentages are user adjustable.	Complete		
The BCPM has been written in a combination of Excel (for user access to algorithms/calculations) and Visual Basic This has improved the speed for processing and expanded the ability to perform scenario analysis.	Complete		

2) Using the current version of your model, provide study area results for Southwestern Bell - Texas (SWTX). For this study area please provide:

a. Summary statistics; total investment per line, loop investment per line; end office switching investment per line; monthly cost per line; loop monthly cost per line; end office switching monthly cost per line; monthly transport cost per line; total households; total residential lines; total single business lines; total business lines; total switched lines; the number of residential lines per density zone, and monthly cost per line per density zone.

SEE ATTACHMENT 1

b. Model results reported on an ARMIS basis; all expenses and plant in service rows that are contained in ARMIS report 43-03. If any of the rows can not be shown separately, provide a list of rows that have been combined and the algorithm used to combine the rows.

SEE ATTACHMENT 2

c. Switching: the total number of switches; and the lines per each switch. Please explain how the cost of the switches was determined, provide all cost input data, and explain how the model determines whether a switch will be a host, remote, or stand alone switch.

Answer to Question 2c:
The number of switches and lines per switch are listed in Attachment 3. The cost of each switch was taken from the switch curve developed by the BCPM team. This switch curve was based upon the industry data that was collected from various LECs. The development of the switch curve is outlined in ATTACHMENT 4.

In regard to the type of switch (host, remote, or stand alone), the BCPM does not make a distinction. Rather, the model employs a curve that is sensitive to the number of lines as the main determinant of switch costs. There are multiple reasons for this. First, the driving factor of switch costs was statistically proven to be line size of the switch. Second, based upon the data that was collected from the LECs, no statistical difference was found between the Host and Remote switch curves. Third, in the collection of the data, it was requested that the cost of the remote should reflect the costs incurred at the host for the remote. Finally, the previous models used the Local Exchange Routing Guide (LERG) as the basis for the decision as to whether the switch should be a host or remote. The LERG information is not necessarily the correct economic basis to use in a forward looking environment.

d. Cable and wire statistics: percent underground, buried and aerial; the length, gauge and size of copper cable used; length and size of fiber cable used; fill factors used as inputs; percent distribution fill determined by the number of lines served divided by the total number of distribution lines installed; percent feeder fill determined by the number of lines served divided by the total number of feeder lines installed (when the feeder is fiber, explain what assumptions were used to determine the capacity and use of the fiber); the distribution of households by loop length; and any factors that alter the cost of cable or the installation of cable such as additional costs associated with placing cable in dense urban areas.

SEE ATTACHMENT 5

e. Digital carrier: the number of lines served by carrier, the investment in carrier and investment in carrier as a percent of circuit investment.

f. Depreciation: the model depreciation rate and expected life by type of plant.

Answer to Question 2f:

SEE ATTACHMENT 6

g. Expenses: direct network expenses; indirect expenses; and common and overhead expenses. Please explain how the model allocates expenses among these various expense categories.

Answer to Question 2g:

ATTACHMENT 10 lists the Class B USOAR expenses used as default values in the BCPM model. Each of the direct expenses included in the default values are assigned to residential service based on forward-looking studies determining the operational expenses associated with providing residential service. The BCPM model does not allocate any expenses. It only includes those expenses "assigned" to basic service.

h. Capital costs: return on capital; and taxes. Please explain how the percentage return on capital was calculated; and how tax gross-ups were determined.

SEE ATTACHMENT 6

Answer to Question 2h:
The return on capital and taxes used in the model are contained in ATTACHMENT 6. The development of the return on capital was based upon the weighted average of LEC responses to an industry data request. This data request asked for each LECs forward looking return on debt and equity along with its debt ratio. These values were then input into the BCPM Capital Cost Module.

The Capital Cost Module combines on a weighted average basis, the Return on Debt and Return on Equity based upon the Debt Ratio to arrive at a Rate of Return. This Rate of Return is then applied to the amount of undepreciated capital remaining in each year for each plant account. A net present value of these return values is generated. Finally, the value is levelized to arrive at the average return on capital for each account.

The taxes were calculated in a similar manner. However, the tax rates were first grossed up before any of the year-by-year calculations were made.

i. Support: the aggregate support at $20, $30 and $40 benchmark levels and the number of households by cost category, where cost categories are ranges of cost per month such as greater than or equal to $5 and less than $10. These reports for SWBTX are displayed in ATTACHMENT 7.

Documentation and verification

3) Explain how the model complies with the criteria for evaluating proxy models set forth in paragraph 277 of the Joint Board's Recommended Decision.

Answer to Question 3

Some of the sponsors do not necessarily agree with each of the Joint Board's criteria. The Sponsor's opening and reply comments in response to the Joint Board Recommended Decision explain their concerns, to the extent they exist. Nothing herein should be construed to indicate the Sponsor's concurrence with these criteria. Following are the eight criteria provided by the Joint Board along with a discussion of how the BCPM meets each criterion.

Criterion 1: Models should use the least-cost, most efficient technology.

- The BCPM uses forward looking technology including fiber driven, integrated loop carrier systems, and digital switching at current network switch nodes.
- The input data for BCPM reflects a broad sampling of the costs LECs are currently experiencing in the purchase and installation of state-of-the-art technology.
- All variables are easily modified by the user.
- In addition, the BCPM uses forward looking technologies such as digital switch, DCL/AF pair gains, and connected to fiber.

Criterion 2: Any network function or element must have an associated cost.

- The BCPM provides and documents the cost of each network function. The algorithms which assure that sufficient plant and equipment are provided are clearly documented and verifiable.
- The BCPM, in addition to documenting the overall cost of providing basic universal service, will be capable of providing the unit costs of specific network elements. This capability, combined with an accurate and verifiable data base of material costs, installation costs, and network design assumptions, will allow for a more accurate view of the cost of these unit network elements.

Criterion 3: Only forward looking, not embedded, costs should be used.

- All costs used in BCPM are based on industry-wide surveys of forward looking costs of deploying and operating cost effective, state-of-the-art technology.

Criterion 4: The model should use forward-looking cost of capital and economic depreciation expense.

- In the BCPM model the development of both the return on and recovery of capital is based on the weighted average of LEC responses to an industry data request. This data request asked for each LECs forward looking return on debt and equity, debt ratio, cost of removal, salvage, and depreciation lives for each plant account plus the current taxes. These values are then used in the BCPM's Capital Cost Module to determine the forward looking return and recovery of capital for each account.
- The default values for cost of capital and economic depreciation expense in the BCPM are based on forward-looking economic considerations.

Criteria 5: The model should include the cost of providing business services.

- The BCPM includes residential and business access lines and makes adjustments for public and special access so that the network design incorporates the efficiencies that a provider of all basic access services in a given geographic area enjoys.

Criteria 6: A reasonable allocation of Joint and Common costs should be assigned.

- BCPM provides an industry-wide composite of forward-looking operational and overhead expenses, by account, that are specifically associated with the provision of basic local exchange service. These are all easily adjusted by the user.

Criteria 7: The model and all underlying data, formulae, computations and software should be available for inspection.

- BCPM is completely documented, user friendly, and easily verifiable. All model equations and logic are clearly stated and described. Underlying data is specifically documented and validated by actual experience in installing state-of-the-art networks and technology.

Criteria 8: The model should include the capability to examine and modify the critical assumptions and engineering principles.

- BCPM allows the user to access and model all variables in the program either though easy to use drop down menus or through direct access to the EXCEL spreadsheets.
- BCPM provides an integrated module to develop structure costs for aerial, buried and underground installations by density group and terrain difficulty. This allows the user to individually vary the cost of installation activities (e.g., plowing, trenching, conduit, etc.) as well as the percentage of construction activity by density zone. Additionally, the user can vary the percentage of an activity which can be shared among utilities, such as the placing of poles.
- BCPM provides methods to process multiple investment and expense views across multiple states. This provides the user with a great deal of flexibility in performing multiple scenario analysis.
- BCPM uses a simple yet powerful module to develop capital costs. The user is able to specify values for costs of debt and equity, debt/equity ratios, as well as depreciation and tax rates. The model uses the financial methodologies that an efficient new entrant would use such as deferred taxes, mid-year, beginning year and end year placing conventions, Gompertz-Makeham survivor curves, future net salvage, and equal life group methods.

- BCPM develops separate depreciation rates and annual charge factors for each of the USOAR Main Accounts.

4) In its Recommended Decision, the Joint Board recommended that universal service support be provided for single line businesses in high cost areas. How do the models calculate costs for single line businesses?

Answer to Question 4

The BCPM quantifies the number of single line business lines by CBG. The investment per line in each CBG is the average loop, switch, and IOF investment for all residence and business lines in the CBG. Each line has the same cost of capital. Operational expenses in the BCPM model are currently assumed to be the same for residence and single line businesses.

5) List all equations used in the model. For each variable used in an equation, provide the definition of the variable, the default value of the variable, identify the source of the value, and state whether the user can change the value of the variable.

SEE ATTACHMENT 8

6) What sources are available to verify that a network derived by a model is capable of delivering telecommunications services consistent with the standard of service adopted in the Joint Board's Recommended Decision?

Answer to Question 6

There are numerous engineering consulting and contracting firms that can verify a network derived from a model. The publication *Telephony* lists most of these companies. Currently, USTA has engaged an engineering consultant to review and critique the engineering assumptions and investment inputs that are used in the BCPM.

7) Your model assumes that vendors typically offer a discount off their list prices for switches and digital loop carrier equipment. Purchasers, however, may be prohibited from disclosing the size of such discounts. Given the inability to provide such information, what alternatives are available to acquire such information?

Answer to Question 7

The BCPM uses actual data from current LEC prurchases of central office plant and outside plant, cable and equipment. These prices reflect the discount provided from the vendor's "list" price and therefore no discount percentage needs to be applied within the BCPM for this data.

The model sponsors have attempted, unsuccessfully, to have equipment vendors provide data on list prices and the typical discount levels for various size LECs. If regulators desire this type of approach, they will likely need to become involved in the process of encouraging equipment vendors to provide such information.

Outside plant

8) Describe the specific manner in which network design parameters (cable gauge, capacitance, loading, resistance, attenuation, cable fill, and concentrator or repeater placement) are used in the development of the models.

SEE ATTACHMENT 9

9) What service capability will local loops have if built to the specifications used in the model? Will all local loops provide (1) full time (non-traffic sensitive and non-party line) service between the customer and the serving wire center and/or (2) digital subscriber line (DSL) capability as described in "BOC Notes on the LEC Networks -- 1994"? Will all local loops be capable of providing (1) basic rate ISDN service (2B+D) and/or (2) full duplex service at the DS1 level (commonly called T1) of 1.544 Mbps?

Answer to Question 9

Because the BCPM is a dynamic model and has been designed to allow for all networks, it has the capability to provide all of the services in Question 9 *if the correct inputs are used by the user.* For example, a break point from copper to fiber digital loop carrier must be set by the user to allow for transmission requirements and specifications of differing services. In order to provide a network that will economically be pre-provisioned for DS1 and below (ISDN, POTS, etc.), a minimum break point of 9000 feet of feeder should be considered. In other words, fiber digital loop carrier should be deployed on all loops where the feeder length is longer than 9000 feet. In addition, distribution lengths beyond a remote terminal should not exceed 9000 feet. To exceed these break points would increase costs dramatically due to coarser gauge copper cables, special repeaters, increased switch costs and the like.

10) The Hatfield and BCM2 models differ with regard to the sharing of structure investments, the mix of aerial, underground and buried cable, and the relationship between the cost of installation and the terrain. For example, the Hatfield model shares structure among three utilities, while the BCM2 model assigns 100% of the cost of structures to the telephone company. The Hatfield model assumes that cable will be extended by 20% when encountering difficult terrain rather than using terrain specific cost characteristics, while the BCM2 uses terrain specific cost characteristics. The BCM2, however, aggregates the terrain specific costs by activities, such as trenching in hard rock or restoring asphalt. Please provide documentation that supports the assumptions used in the models. Alternatively, please provide documentation that refutes these assumptions.

SEE ATTACHMENT 9

Switching

11) The models, at least in part, reply on Bellcore's Local Exchange Routing Guide, which may not include all wire centers. Do the models reflect all wire center locations? Should the models reflect all wire center locations? Do the models include host-remote configurations when it is efficient to do so?

Answer to Question 11

To correctly assign customers to their serving wire center, the BCPM relies on the Ontarget Exchange Info data product to reflect wire center locations. This data base is similar to the LERG, but it also includes the wire center boundaries. Exchange Info Plus only lists those offices that are listed in the LERG and includes only the ILEC's landline end office switch locations. For any switches that are not listed, we know of no other commercial source for such switch locations and boundaries. Therefore, the BCPM uses this Ontarget Exchange Info data.

With regard to host-remote configurations, the BCPM model uses the switch curve that is outlined in ATTACHMENT 4. As stated in response 2c, the BCPM does not make a distinction between host and remote placement. Rather the curve represents the average costs of a switch installed with the given line size.

Demand for lines

12) Do the models accurately estimate the total demand for lines in a particular geographic area, such as a Census block group, wire center, or service area? What types of lines (e.g., residential, single-line business, multiline business, and special access) are, or should be, included in a model's estimated demand for lines? Can the model estimate the incremental cost of adding households to the network?

Answer to Question 12:

The BCPM estimates total access lines for each CBG according to the following methodology:

1) Data inputs are:
   - 1995 residential and business access line counts for the state
   - 1995 household counts for each CBG
   - Number of employees by CBG
2) The access lines in each CBG are estimated in the following manner:
   - Residential access lines are estimated by allocating actual residential access lines in a state to each CBG based on households in the CBG.
   - Business access lines are estimated by allocating actual business access lines in a state to each CBG based on the number of employees in the CBG.

As a result, the sum of the residential and business access lines for every CBG in a state matches the actual reported access lines at the state level. As described in the answer to Question 1, the BCPM will be enhanced to match access lines at the company level (e.g. the sum of the access lines for each CBG served by a company will match that company's total access line count).

Ultimately, the most accurate method to populate access lines by CBG is to have each company conduct a study to determine its actual access lines for both business and residential customers in each of the CBGs it serves.

The estimated access lines in the BCPM includes all access lines (business, residential., and special access). The inclusion of all lines ensures that the model results reflect the deficiencies or economies of scale to serve the entire market.

The BCPM is not an incremental cost model in the sense of estimating the cost of adding to an existing market. Rather, it is designed to estimate the total cost of serving the entire market, at current levels of demand (e.g. total access lines). The cost per access line output of the BCPM is the average cost per access line in each CBG.

The BCPM can be run at various demand levels. The cost differences between model runs at different demand levels would measure changes in average costs, not incremental costs.

Furthermore, dividing the change in total cost by the change in access lines does not represent an economically meaningful measure of the incremental costs of the additional lines. Since the model is run based on total demand, there is no rational basis to assume that the unit cost of any access line in a CBG is lower or higher than the unit cost of any other access line in that CBG. For example, the model might show that a CBG with 100 access lines has an average cost of $30 per month per access line, and doubling the number of access lines reduces the average cost to $20 per month per access line. In this example, the total cost for that CBG increased from $3000 to $4000. To interpret this result to mean that the "incremental cost" of the additional access lines is $10 (the $1000 total cost increase divided by the 100 additional access lines) has little rationale. One could just as well conclude that the reductions in average costs should be assigned to the original 100 access lines. In general, "incremental" analysis of this type is inherently arbitrary, since it is predicated on the assumption that one class of customers (new, business, or residential) should bear a proportionately smaller share of the fixed costs of the network than other customers.

In addition, characterizing the change in total cost divided by the change in total demand as an incremental cost raises other issues. For example, if demand in an urban area increased, but the number of access lines in a rural area served by the same switch and feeder route remained constant, the effect of the increased demand in the urban area may result in a lower average cost in the rural area. It is impossible to make sense of such CBG specific results (a change in cost with no change in demand) in an incremental framework.

To summarize, the BCPM is a total cost model, and it makes no attempt (and was not designed) to attribute the change in costs to a change in demand in a specific area. In the context of the above example, identifying the change in total costs associated with an increase in demand in one or several CBGs would require entirely different logic in the model.

Expenses

13) All the models appear to base repair and maintenance and retail costs on historical costs. In some cases this is done based on a historical relationship between investment and expenses as reported in ARMIS; in other cases they are based on per line amounts. For these categories of expense, to what extent are these historical expenses a reasonable approximation of forward looking expenses? How are gains in productivity due to technological advances and increased competitive pressure captured by the model's estimates of repair and maintenance and retail costs?

Answer to Question 13:

Based on statistical analyses that demonstrate that most expenses are highly and positively correlated with lines, the BCPM developed its operating expenses on a per line basis. These per line estimates are not based on ARMIS values. Rather, these expense values were derived by taking a weighted average of the LEC estimates of forward-looking expenses per line for each Class A expense account (6xxx series). The expenses were defined as the total forward-looking loop costs for single line residence and business, and include touch-tone, a white page listing, and access to operator and emergency services.

In regard to the repair, maintenance, and retail costs (as with the other accounts), the per line estimates are forward looking. The estimates from the various LECs included adjustments for productivity gains, exclusion accounts such as analog switching, and forward looking adjustments. Almost all estimates started with 1995 actuals (a few companies averaged multiple years) as the basis for the values. These current year expenses are the best known values of the LEC cost to maintain the current efficient telephone network. When 1996 data is available, the BCPM can easily incorporate it into the model.

14) Do the retail costs -- the costs of bill production, billing inquiries, and advertising - developed for your model reflect the costs associated with the services included in the revenue benchmark included in the Recommended Decision? What share of your retail costs are associated with bill production and billing inquiries? How are retail costs developed to capture the costs of services included in the revenue benchmark while excluding retail costs associated with services not included in the benchmark, such as intraLATA toll.

Answer to Question 14

The expense levels reflected in the BCPM are defined as the total forward-looking expenses associated with basic residential service, including touch-tone, a white page listing, and access to operator and emergency services. No costs associated with intraLATA toll vertical services or enhanced services were included by those companies providing data for the model.

Based on a roll-up of ARMIS 43-04 data, the distribution of customer service expenses (excluding marketing) incurred during 1995 follows:

1995 ARMIS 43-04 Detail

Other Customer Service Expenses	(000)	per line / month		BCPM expense / line / month
Operator Services	2,079,867	23.20%	$1.07	
Published Directories	518,741	5.79%	$0.27	
End User Service	4,139,287	46.17%	$2.13	
IXC Service	383,014	4.27%	$0.20	
Message Processing	78,022	.87%	$0.04	
End User Billing	943,846	10.53%	$0.49	
IXC Billing	44,107	.49%	$0.02	
Other	777,958	8.68%	$0.40	
Total	8,964,842	100.00%	$4.62	$2.422

Both End User Service and IXC Service categories include: service order processing, payment and collection, and billing inquiry.

15) How is depreciation expense treated in the current version of the model? In particular, describe in detail the set of plant categories considered and the asset lives or economic depreciation rates associated with each. Justify, if possible, the default choices made in the model. Describe the extent to which the model has sufficient built-in flexibility to accurately reflect differing decisions by the FCC and state commissions regarding depreciation rates? Are there enough distinct categories of plant to accurately model forward looking depreciation expense? For example, should asset lives for conduit necessarily be the same as cable lives?

Answer to Question 15:

The plant categories, their lives, and their depreciation rates are contained in ATTACHMENT 10. The BCPM allows annual charge factor inputs for all major plant accounts (e.g., conduit has its own values). This improvement was made to recognize that all of the major accounts have differing lives, salvage, cost of removal, tax lives, and survival curves, which ultimately lead to distinct capital costs factors for each account.

Estimates of lives are used as inputs to the BCPM's Capital Cost module to develop the depreciation rates. The lives, salvage, and cost of removal are based upon the LEC industry data survey requesting forward looking lives.

The development of the annual charge factors is as important as the proper building of the plant. The BCPM includes a powerful yet simple model that allows the user to vary the basic inputs to arrive at the depreciation, cost of capital, and tax rates for each account. This new module incorporates all of the methodologies that are currently in practice today, including: deferred taxes, mid-year, beginning year, and end year placing conventions, Gompertz-Makeham Survival curves, future net salvage, equal life group methods. The module also incorporates separate cost of debt and equity rates, along with the debt to equity ratio. And as stated, all of these inputs are user controlled.

16) The BCM2 includes 75% of $133.39 per year or $8.34 per month per line to reflect non-plant-related expenses such as marketing and customer operations. The adjustable 10% overhead figure in the Hatfield model is the only similar component. Should costs for customer or corporate operations be a fixed amount per line? If not, what should be the basis for allocating these costs? To what extent should basic local service be charged with marketing or customer operations expenses?

Answer to Question 16

Benchmarking within the telecommunications industry has historically used a per access line basis to measure the productivity of the expenses involved in marketing, customer services, and corporate operations. Rather than introduce an unfamiliar methodology, the per access line basis was continued for the BCPM as a number of variable inputs at the Part 32, Class B level. This method helps the user avoid confusion when calculating the expenses associated with corporate operations. While the BCPM model yields a precise expense level recognized by the user, the Hatfield Model 2.2.2 yields a result that is not readily quantified for the user. The base to which the percent overhead is applied is not defined, nor is the total corporate operations expense reported in the model.

We believe that local competition will cause an increase in marketing expenses incurred to educate and retain our customer base. It will continue to be necessary to provide customer services, whether the customer is an end user customer or another carrier. We do not expect the levels of customer service expenses to change significantly from what is incurred in today's environment.

Use of proxy models for multiple objectives

17) Can a single proxy model be used to estimate the cost of the local exchange network for universal service support and for other objectives such as the pricing of network elements or access reform? Does a network specifically dedicated to universal service objectives differ in a significant way from the summation of network elements envisioned in Section 251? Are there insurmountable problems in the treatment of common costs in the different uses of the model? Describe specifically the modifications, if any, that would be required if a single model is used for multiple objectives.

Answer to Question 17

Although the development of costs for unbundled network elements (UNEs) and the development of costs for Universal Service Funding (USF) purposes should be grounded in the same costing methodology, there are several significant differences between the two costing studies.

1. Retail Versus Wholesale Costs
USF costs include retail level costs--i.e., the costs of marketing , business office, billing and collection. UNEs, on the other hand, are a wholesale offering, and do not include any retail level costs. Rather, UNE's cause additional expenses to be incurred on the wholesale side.

2. Element or Component Versus Service Level Costing
USF costs are service level costs. A proxy model for USF purposes focuses on developing the costs of providing a specific service (e.g. voice grade POTS) for an average customer in a particular geographic area.

UNEs, on the other hand, are discrete network components. Not all of the costs of UNEs are included in a USF model, which is based on an integrated network. For example, the cost of an unbundled loop includes not only the outside plant (feeder and distribution) costs included in a USF model, but also the additional costs of provisioning a loop not interconnected with the ILEC switch. These additional costs include the termination equipment necessary to interconnect the loop with the CLEC facilities (or, if the CLEC provides the termination equipment, the costs of physical collocation at the ILEC wire center or other point of interconnection).

Moreover, UNE costing must be considerably more granular than USF costing. Switching is a good example of this difference. In a USF model, it is reasonable to use the average usage in developing switching costs, and hence total service costs. Cost based UNEs, on the other hand, have to reflect customer specific costs. This would necessitate a usage based element (ideally, based on peak usage) in the local switching UNE. Similarly, separate pricing would be required for other components such as switch features and trunk ports. Thus, a proxy model developed for UNE purposes must incorporate much more granular cost functions than is required for USF purposes.

Finally, the USF cost model incorporates an allocated portion of common and overhead costs to universal service. The development of UNE costs requires the allocation of those aggregate common and overhead costs to individual network elements.

3. Company level versus nationwide average costs
A USF proxy model is intended to estimate the costs that would be incurred by any efficient company in providing service to a particular geographic area. It is not meant to replicate the costs of a specific company. It is used to define a total level of compensation that is reasonable for any company, CLEC or ILEC, providing the service. LECs also receive compensation from their basic service rates and other rate rebalancing. In this context, use of nationwide average input factors is as reasonable an approximation as can be made for the purpose of defining costs for USF subsidy payments.

UNEs, by contrast, represent the total compensation which an ILEC will receive for providing piece parts of its network. An ILEC, in fulfilling its obligations to provide UNEs, typically seeks to base its UNE prices on its own, and not nationwide average, input costs. To not use company specific costs would lead to competitive inequities (e.g. UNE prices either too high or too low relative to the specific ILEC's costs). Therefore, UNE cost development for a particular company can vary significantly from the costs implied in a USF model based on nationwide average inputs. Differences can arise from many sources: equipment discounts, fill factors; switching vendor differences, actual usage levels, etc.

For all of the foregoing reasons, the costs of network components identified in a USF service level model cannot be equated with the costs (and prices) of UNEs. At best, the USF based component costs can be used as the starting point for developing the costs and rate structure for UNEs.

While the two processes are fundamentally different, they can be related if the top-down (USF) and the bottom-up (UNE) studies rely upon the same basic input cost data sets and network design assumptions to produce their results. This is what is done within the Hatfield model. The Hatfield model is composed of at least two distinct and different models operating from the same data and assumption sets. The validity of the outputs of these models - basic service costs and unbundled elements costs - are thus only as good as the validity of the input data and design assumptions

The BCPM sponsors are in the process of developing an additional module to calculate a nationwide benchmark UNE cost from the same data and network design assumptions used in the development of the benchmark USF costs. We expect this module to be complete and results available no later than February 15, 1997.

Sincerely,

Alan Ciamporcero /MLM
Pacific Bell

Warren Hannah /MLM
Sprint

Glenn Brown /MLM
U S WEST

FCC Request
Attachment 3

Number of Switches - 511

Switch Name	Number of Lines
ABLNTXORDS0	46,982
ABLNTXOWDS0	50,082
ABRYTXGIDS0	2,584
ADVLTXAVRS0	782
AGTNTXDARS0	3,990
AGTNTXTIDS0	16,792
ALBYTXPORS0	2,661
ALICTXALDS0	18,067
ALLNTXSADS0	19,633
ALPITXAPDS0	1,535
ALSNTXALRS0	1,295
ALVDTXTIRS0	11,526
ALVNTXALCG0	26,461
AMRLTX02DS0	125,593
AMRLTXDIRS0	2,008
AMRLTXEVDS0	21,050
AMRLTXOSRS0	15,452
ANNATXWARS0	1,585
ANSNTXANRS0	2,897
ASTNTXASRS0	1,856
ATLNTXSWDS0	10,558
AUSTTXBCRS0	1,840
AUSTTXBERS0	959
AUSTTXCFRS0	3,533
AUSTTXCRRS0	6,003
AUSTTXCVDS0	12,742
AUSTTXEVDS0	27,939
AUSTTXFADS0	20,347
AUSTTXFIDS0	50,726
AUSTTXGRDS0	88,153
AUSTTXHIDS0	104,137
AUSTTXHOCG0	105,188
AUSTTXJOCG0	44,147
AUSTTXLEDS0	9,653
AUSTTXLTRS0	6,691
AUSTTXLWRS0	6,950
AUSTTXMADS0	2,145
AUSTTXMCDS0	43,703
AUSTTXMFRS0	2,107
AUSTTXPFDS0	18,043
AUSTTXRRDS0	36,793
AUSTTXTECG0	44,615
AUSTTXTWDS0	38,761
AUSTTXWADS0	36,108
AUSUTXENRL0	24,502
BAVLTXBKRS0	2,513
BETNTXBEDS0	22,978

FCC Request
Attachment 3

Number of Switches - 511

Switch Name	Number of Lines
BEVLTXBVDS0	13,543
BGSPTXBSDS0	17,958
BGWLTXBWRS0	457
BLLVTXFRRS0	1,627
BLVLTXBLRS0	6,795
BNDRTXBDRS0	3,924
BNVDTXBNRS0	2,278
BOWITXTRRS0	5,724
BRCYTXBRDS0	9,726
BRGRTXBGDS0	13,529
BRHMTXBRDS0	18,386
BRKBTXEFRS0	8,305
BRRGTXHIDS0	7,917
BRTLTXBRRS0	1,455
BRUNTXBRRS0	1,012
BSTRTXBSDS0	11,897
BTVLTXBVRS0	722
BUMTTXTEDS0	32,192
BUMTTXTWDS0	26,175
BUMTTXUNCG0	30,207
BUMTTXVICG0	23,112
BUNATXBURS0	4,482
BWVLTXLIDS0	77,398
BWVLTXOLRS0	6,578
BWVLTXTEDS0	8,922
BYCYTXBYCG0	15,832
BYSDTXBYRS0	2,612
CELNTXDURS0	2,323
CHINTXCHRS0	2,214
CHLCTXULRS0	767
CHLDTXWERS0	5,120
CHRNTXCHRS0	3,524
CHRSTXCHRS0	1,244
CISCTXHIRS0	3,858
CLBNTXMIDS0	25,660
CLCYTXCCRS0	5,171
CLEVTXCLDS0	13,932
CLMBTXCLRS0	5,696
CLNTTXMARS0	6,755
CLUTTXCLCG0	21,303
CLUTTXLJCG0	13,294
CLVTTXCLRS0	2,010
CMRNTXCMRS0	5,249
CMTNTXCBRS0	363
CNDNTXCDRS0	2,354
CNTLTXMARS0	7,817
CNTRTXCNDS0	9,099

FCC Request
Attachment 3

Number of Switches - 511

Switch Name	Number of Lines
CNYNTXCYDS0	10,722
CRANTXCRRS0	3,513
CRCHTXBURS0	12,106
CRCHTXCADS0	18,076
CRCHTXFBDS0	20,541
CRCHTXTECG0	68,903
CRCHTXTUDS0	39,840
CRCHTXWYDS0	68,174
CRCYTXCCRS0	5,122
CRGNTXCRDS0	3,121
CRSCTXTRDS0	20,950
CRSPTXCSDS0	3,802
CRTHTXOXCG0	9,090
CSVLTXCTDS0	4,040
CTRNTXCRRS0	165
CUERTXCRRL0	7,283
CYPRTXCYDS0	18,106
DDWDTXMARS0	1,031
DESNTXHODS0	22,183
DEVNTXDVDS0	8,492
DLLSTXADCG0	123,470
DLLSTXCHDS0	17,671
DLLSTXDACG0	51,773
DLLSTXDICG0	97,666
DLLSTXDNDS0	26,248
DLLSTXDSDS0	23,131
DLLSTXDVCG0	54,382
DLLSTXEMDS0	110,332
DLLSTXEVDS0	49,918
DLLSTXEXDS0	45,856
DLLSTXFBCG0	78,585
DLLSTXFEDS0	60,708
DLLSTXFLDS0	56,122
DLLSTXFRCG0	54,941
DLLSTXGPCG0	40,488
DLLSTXHACG0	33,386
DLLSTXHUDS0	8,456
DLLSTXLADS0	74,931
DLLSTXLNDS0	16,475
DLLSTXMCCG0	188,333
DLLSTXMECG0	68,914
DLLSTXMSDS0	38,805
DLLSTXNMCG0	57,052
DLLSTXNODS0	9,611
DLLSTXRECG0	76,668
DLLSTXRICG2	96,066
DLLSTXRNDS0	99,378

Number of Switches - 511

Switch Name	Number of Lines
DLLSTXRYDS0	20,350
DLLSTXSEDS0	11,061
DLLSTXSUDS0	9,212
DLLSTXTADS0	40,956
DLLSTXWHCG0	54,768
DONNTXDODS0	16,944
DWVLTXDWRS0	2,122
DYTNTXDYRS0	6,947
EDBGTXEBCG0	40,865
EDCHTXEDRS0	11,031
EDNATXEDRL0	4,527
EDWDTXTWRS0	2,923
EGLKTXEGDS0	3,604
EGPSTXEPCG0	25,289
ELCMTXELCG0	12,243
ELGNTXELRS0	5,975
ELPSTXEADS0	61,447
ELPSTXHADS0	92,226
ELPSTXHCRS0	2,716
ELPSTXMADS0	43,496
ELPSTXMSDS0	27,906
ELPSTXNECG0	41,446
ELPSTXNODS0	55,563
ELPSTXSECG0	64,545
ELPSTXSHDS0	20,749
ELPSTXYSDS0	32,124
ENNSTXTRDS0	13,664
ESLDTXMARS0	4,223
EVDLTXEVRS0	2,776
FLDDTXFLRS0	3,810
FLHGTXFHRS0	1,293
FLTOTXFLRL0	1,753
FNNTTXFNRS0	1,775
FRERTXFRRS0	2,553
FRNYTXHIRS0	4,335
FRPTTXFRCG0	19,353
FRSCTXCOCG0	13,875
FRSCTXESDS0	5,383
FRSCTXWERS0	4,998
FRVLTXSTRS0	5,141
FTDVTXFDRS0	1,268
FTSTTXFSRS0	7,452
FTWOTXALRS0	5,910
FTWOTXARCG0	81,526
FTWOTXATCG0	67,714
FTWOTXAXCG0	66,044
FTWOTXBBDS0	16,502

Number of Switches - 511

Switch Name	Number of Lines
FTWOTXBERS0	5,076
FTWOTXBNDS0	22,875
FTWOTXBRDS0	17,156
FTWOTXBUCG0	66,979
FTWOTXBYDS0	7,555
FTWOTXCEDS0	26,167
FTWOTXCFRS0	15,299
FTWOTXCIDS0	33,624
FTWOTXCPDS0	17,982
FTWOTXECCG0	26,787
FTWOTXEDDS0	63,419
FTWOTXEUCG0	62,138
FTWOTXGLCG0	43,166
FTWOTXJECG0	29,731
FTWOTXKECG0	51,711
FTWOTXLWDS0	20,236
FTWOTXMADS0	35,910
FTWOTXPECG0	38,538
FTWOTXTEDS0	34,599
FTWOTXWACG0	63,302
FTWOTXWSDS0	34,407
GLDSTXGSRS0	622
GLTNTXSHDS0	34,337
GLTNTXSOCG0	33,601
GLTNTXWIDS0	5,982
GNVLTXGLDS0	24,519
GOLITXGORL0	3,124
GRBYTXRADS0	15,885
GRDNTXMYRS0	1,044
GRFLTXGFRS0	543
GRHMTXLIDS0	11,069
GRVRTXGVRS0	1,151
GRWDTXGRRS0	1,596
GSVLTXHOCG0	15,612
HBVLTXHBRS0	3,486
HERNTXHEDS0	5,877
HLBOTXJUDS0	6,997
HLCTTXHCRS0	2,194
HMLNTXHMRS0	2,678
HMPSTXHMDS0	5,156
HNGVTXFRRS0	2,052
HNRTTXBRRS0	3,013
HNVITXHNDS0	25,935
HONDTXHORS0	6,311
HRFRTXHFDS0	12,361
HRLNTXHGDS0	48,068
HRMLTXHLRS0	1,413

Attachment 3

Number of Switches - 511

Switch Name	Number of Lines
HSTNTXADCG0	38,053
HSTNTXAICG0	60,693
HSTNTXALCG0	108,103
HSTNTXAPCG0	45,807
HSTNTXBACG0	79,121
HSTNTXBRCG0	30,974
HSTNTXBUDS0	112,091
HSTNTXBWCG0	40,083
HSTNTXCACG1	37,648
HSTNTXCHRS0	22,528
HSTNTXCLCG1	80,201
HSTNTXDPCG0	24,946
HSTNTXEERS0	41,346
HSTNTXEHCG0	12,193
HSTNTXFACG0	74,268
HSTNTXFRCG0	27,010
HSTNTXGLCG0	51,823
HSTNTXGPDS0	54,562
HSTNTXGRCG0	46,589
HSTNTXHOCG1	103,466
HSTNTXHUDS0	72,837
HSTNTXIDCG0	19,037
HSTNTXJACG0	74,705
HSTNTXLACG0	54,568
HSTNTXLPDS0	18,801
HSTNTXMADS0	8,339
HSTNTXMCDS0	59,687
HSTNTXMICG0	55,432
HSTNTXMOCG0	66,043
HSTNTXNACG0	110,606
HSTNTXNECG0	34,155
HSTNTXORCG0	42,292
HSTNTXOVCG0	70,020
HSTNTXOXCG0	65,334
HSTNTXPACG0	73,836
HSTNTXPERS1	23,186
HSTNTXPRCG0	110,611
HSTNTXRECG0	44,124
HSTNTXRIDS0	51,641
HSTNTXSACG0	59,306
HSTNTXSERS0	6,221
HSTNTXSHDS0	4,743
HSTNTXSUCG0	122,861
HSTNTXUNCG0	91,317
HSTNTXWACG0	52,792
HSTNTXWECG0	23,555
HSTNTXWLCG0	38,960

FCC Request
Attachment 3

Number of Switches - 511

Switch Name	Number of Lines
HSTNTXWYDS0	22,292
HTVLTXHVRL0	4,095
IRANTXIRRS0	1,799
ITLYTXHURS0	2,041
IWPKTXBARS0	7,694
JCBOTXLORS0	3,299
JFSNTXMORS0	4,541
JSPRTXDUDS0	11,335
JSPRTXRARS0	2,004
JWTTTXJWDS0	780
KBVLTXKBRS0	5,422
KGVLTXKVDS0	19,408
KNDYTXKNRS0	4,022
KNTZTXKNRS0	4,616
KRCYTXFCRS0	1,124
KRCYTXKCRS0	2,426
KRMTTXKMRS0	5,033
LADNTXENRS0	743
LAPRTXLPRS0	843
LARDTXLADS0	96,038
LBCKTXFRDS0	26,167
LBCKTXPADS0	19,732
LBCKTXPSDS0	51,448
LBCKTXSWCG0	77,288
LBHLTXLHRS0	1,658
LBLLTXLBRS0	1,625
LBRTTXLBDS0	7,283
LCKHTXLKDS1	7,956
LCKNTXLORS0	1,947
LCSTTXLCRS0	1,592
LFRSTXLFRS0	935
LGVWTXGRDS0	32,456
LGVWTXJUDS0	8,293
LGVWTXMICG0	7,534
LGVWTXPLDS0	39,369
LLNGTXLURS0	5,493
LMPSTXLSRS0	7,879
LMTNTXLMRS0	7,578
LNDLTXTUDS0	7,253
LSFRTXLFDS0	2,957
LYTLTXLYRS0	2,987
MARFTXMFRS0	2,372
MARNTXMRRS0	6,191
MCALTXHIRS1	9,667
MCALTXMUCG0	71,209
MCKNTXLIDS0	24,197
MCKNTXTERS0	4,065

FCC Request
Attachment 3

Number of Switches - 511

Switch Name	Number of Lines
MCLNTXMLRS0	951
MCMYTXMCRS0	1,484
MDKFTXMKRS0	956
MDLDTXMU02T	52,751
MDLDTXOXDS0	41,797
MDLKTXMLRS0	3,358
MDLTTXGRDS0	7,249
MDVITXMDRS0	6,360
MEXITXMXRS0	9,079
MINLTXLORS0	7,171
MNHNTXMODS0	7,168
MNPLTXPADS0	15,461
MNWLTXFADS0	15,115
MOLTTXMNRL0	1,253
MRCDTXMEDS0	15,028
MRDNTXMERS0	1,614
MRLNTXMLRS0	6,759
MRSHTXWECG0	23,761
MRVLTXMRRS0	6,629
MSSNTXMIDS0	34,312
MTGRTXMTRS0	958
MTHSTXMARS0	6,956
NBRNTXNBCG0	32,345
NCGDTXNCDS0	36,115
NDLDTXNDDS0	27,169
NRDHTXNHRL0	865
NWRKTXHURS0	3,407
ODSSTXEMDS0	85,406
ODSSTXLICG0	1,996
ODSSTXREDS0	16,168
OGLSTXOGRS0	1,221
OMAHTXTURS0	3,348
ORNGTXORDS0	30,501
OWTNTXTRRS0	4,644
PAMPTXPPDS0	16,717
PARSTXNODS0	3,637
PARSTXSUDS0	27,962
PCRKTXPCDS0	1,625
PHRRTXPHCG0	40,816
PLTNTXPLDS0	6,443
PLVWTXPVDS0	19,655
PNHRTXPNDS0	11,565
PRSLTXPSRS0	5,505
PRSPTXFIRS0	1,504
PRTNTXRERS0	8,889
PRVWTXPRRS0	3,255
PSBGTXUNRS0	7,965